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Variation in sensory profile between individual Rainbow trout from the same production batch

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The variation in sensory properties between individual Rainbow trout (*Oncorhynchus mykiss*) belonging to the same aquaculture production batch was explored by using objective sensory profiling on minced and heat treated fillets. Additionally, Quality Index, mechanical texture, pH, fat and water content were measured. 30 fish, all from the same production batch, were sampled at three different times making three groups (ten fish each time). The results showed differences in the sensory profile between individual fish within all three groups. Also sensory differences between the three groups of fish were found. Similar differences in mechanical texture were found between individuals in two of the three groups and between the groups. No differences were found in Quality Index neither between individuals nor groups. A significant correlation between lipid content and firm texture was observed, but in general, the results from the chemical and physical measurements were not able to explain the differences found in the sensory profiling or in the mechanical texture. The results showed that significant difference in sensory profiles of individual fish form the same aquaculture production batch can be presence. Furthermore, the results also show sensory difference between groups of samples taken at different times during a product day.

Based on the conclusion from this study, it is generally recommended that in future experiments where objective sensory measurements are performed on aquaculture produced fish, all sensory assessors get samples from the same fish if possible. Additionally it is recommended that the number of replicates used in experiments where sensory analysis is performed on aquaculture-produced fish is carefully considered, making sure that a sufficient number of samples are used to obtain a valid conclusion.

Keywords: Descriptive analysis, individual differences, Rainbow trout